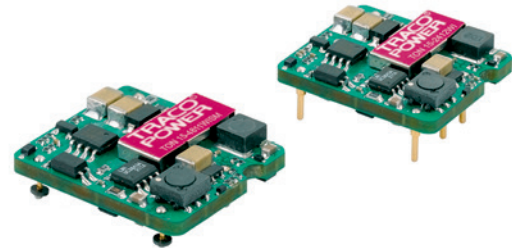


Features

- ◆ Ultra compact 15W converter
- ◆ Ultra wide 4:1 input voltage range
- ◆ Cost efficient open frame design with industry standard pin-out
- ◆ Surface-mount (SM) and through-hole version
- ◆ I/O isolation voltage 2250V, rated for basic insulation
- ◆ Extended operating temperature range -40°C to $+85^{\circ}\text{C}$
- ◆ Remote On/Off
- ◆ Lead free design, RoHS compliant
- ◆ 3-years product warranty



The TON-15WI series is a generation of high performance 15W dc-dc converters with ultra-wide input voltage range and precisely regulated output voltage. The ultra compact open frame design with industry standard pin-out provides the designer now a 50% smaller, cost efficient alternative to existing 10 to 15W converters in the market. Built-in filters for both input and output minimize the need for external filtering.

Further features include remote On/Off, output voltage trimming, over voltage protection and short circuit protection. Typical applications are distributed power systems, instrumentation and industrial electronics, everywhere where space on the PCB is a critical factor.

Models

Order code	Input voltage range	Output voltage	Output current max.	Efficiency typ.
TON 15-2410WI	9 – 36 VDC (24 VDC nominal)	3.3 VDC	4'000 mA	85 %
TON 15-2411WI		5.0 VDC	3'000 mA	87 %
TON 15-2412WI		12 VDC	1'300 mA	86 %
TON 15-2413WI		15 VDC	1'000 mA	86 %
TON 15-4810WI	18 – 75 VDC (48 VDC nominal)	3.3 VDC	4'000 mA	85 %
TON 15-4811WI		5.0 VDC	3'000 mA	87 %
TON 15-4812WI		12 VDC	1'300 mA	86 %
TON 15-4813WI		15 VDC	1'000 mA	86 %

Add suffix **SM** for surface mount version

Input Specifications

Input current at no load	24 V; 3.3/5 Vout models: 65 mA typ. 24 V; 12/15 Vout models: 10 mA typ. 48 V; 3.3/5 Vout models: 40 mA typ. 48 V; 12/15 Vout models: 15 mA typ.
Input current at full load	24 V; 3.3 Vout models: 680 mA typ. 24 V; other output models: 790 mA typ. 48 V; 3.3 Vout models: 340 mA typ. 48 V; other output models: 390 mA typ.
Input voltage variation (dv/dt)	5 V/ms, max. (complies with ETS 300 132 part. 4.4)
Start-up voltage / under voltage lockout	24 V models: 9 VDC / 8 VDC 48 V models: 18 VDC / 16 VDC
Surge voltage (100 msec. max.)	24 V models: 50 V max. 48 V models: 100 V max.
Input filter	capacitor type (see application note for compliance to EN 55022 class A/B)
Radiated immunity	EN 61000-4-3 10 V/m, perf. criteriy A
Fast transient / surge	EN 61000-4-4, ±2 kV, perf. criteria A EN 61000-4-5, ±1 kV perf. criteria A with external input capacitor e.g. Nippon chemi-con KY 220 µF, 100 V, ESR 48 mOhm
Conducted immunity	EN 61000-4-6, 3 Vrms, perf. criteria A
Reflected ripple current	30 mA _{p-p} typ.

Output Specifications

Voltage set accuracy	±1 %
Output voltage adjustment	±10 % (see application note)
Regulation	– Input variation Vin min. to Vin max. 0.2 % max. – Load variation 0 – 100 % 0.2 % max.
Minimum load	0 % of rated max. load
Temperature coefficient	±0.02 %/K
Ripple and noise (20 MHz Bandwidth, measured with 1 µF M/C and 10 µF TC)	100 mV _{pk-pk} typ
Start up time	– Power On 30 ms typ. (constant resistive load) – Remote On 30 ms typ.
Transient response setting time (25% load step chang)	250 µs typ.
Short circuit protection	indefinite (automatic recovery)
Over load protection	at 150 % of Iout max., foldback
Over voltage protection	3.3 Vout models: 3.7 – 5.4 Vout 5 Vout models: 5.6 – 7.0 Vout 12 Vout models: 13.8 – 17.5 Vout 15 Vout models: 16.8 – 20.5 Vout
Capacitive load	3.3 Vout & 5.0 Vout models: 1'000 µF max. 12 Vout models: 330 µF max. 15 Vout models: 220 µF max.

General Specifications

Temperature ranges	– Operating –40°C to +85°C (with derating) – Storage –55°C to +125°C
Derating	6.7 %/K above 75°C
Humidity (non condensing)	5 % to 95 % rel H

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

General Specifications

Thermal shock		acc. MIL-STD-810F
Vibration		acc. MIL-STD-810F
Reliability, calculated MTBF (MIL-HDBK-217F, at 25°C, ground benign)		>2.4 Mio. h
Isolation voltage (60 sec) – Input / Output		2'250 VDC (complies with basic insulation rating per EN 60950-1)
Isolation resistance – Input / Output		>1'000 M Ohm
Isolation capacitance – Input / Output		1500 pF max.
Switching frequency (Pulse width modulation PWM)	3.3 / 5 Vout models: 12 / 15 Vout models:	350 kHz typ. 400 kHz typ.
Remote On/Off	– On: – Off: – Off idle current:	3.0 to 15 VDC or open circuit. 0 to 1.2 VDC or short circuit pin 6 and pin 2 2.5 mA typ. negative remote On/Off logic on demand
Safety standards		UL 60950-1, EN 60950-1, IEC 60950-1
Safety approval		www.ul.com -> certifications -> File e188913
Environmental compliance	– Reach – RoHS	www.tracopower.com/products/reach-declaration.pdf RoHS directive 2011/65/EU

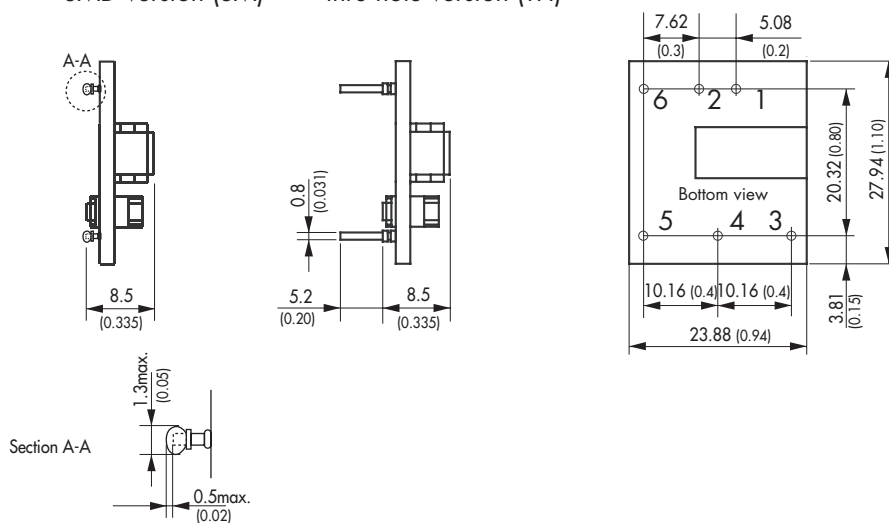
Physical Specifications

Weight		10.5g (0.36oz)
Soldering profile for trough hole version		max. 265°C / 10 sec. (wave soldering)
Lead-free reflow solder process for SMD-package models		as per J-STD-020D.01 (to find at: www.jedec.org - free registration required)
Washing procedure		www.tracopower.com/products/ton15-clean.pdf

Application note: www.tracopower.com/products/ton15wi-application.pdf

Outline Dimensions

SMD version (SM) thru hole version (TH)



Pin-Out	
Pin	Single
1	+Vin (Vcc)
2	-Vin (GND)
3	+Vout
4	Trim
5	-Vout
6	Remote On/Off

Dimensions in [mm], () = Inch
 Tolerances: ±0.5 (±0.02)
 Pin pitch tolerances: ±0.25 (±0.01)

Specifications can be changed without notice! Make sure you are using the latest documentation, downloadable at www.tracopower.com



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.